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| 09/891,710 | 06/26/2001 | Asher Hazanchuk | ALT.P001 | 1818 |

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| EXAMINER | |
|---|---|
| AHN, SAM K | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/891,710 | HAZANCHUK, ASHER | |
| | Examiner | Art Unit | |
| | Sam K. Ahn | 2611 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *15 April 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-9,11-15,17-23,25-27,29-35 and 37-50* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9,11-15,17-23,25-27,29-35 and 37-50* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 April 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments, see p.17, filed 04/15/07, with respect to the rejection(s) of claim(s) 1-46 under 102(a) and 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Imaizumi et al. US 6,707,844 (Imaizumi) and Okubo et al. US 6,212,222 (Okubo).

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-9,11-15,17-23,25-27,29-33,35,38,39,41 and 44-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imaizumi et al. US 6,707,844 (Imaizumi) in view of Okubo et al. US 6,212,222 (Okubo).

Regarding claim 1, Imaizumi teaches a method for managing a code sequence (see Fig.8), comprising: determining first intermediate correlation values (first two outputs of the elements 42) for a first plurality of sample sequences (from DATA received) during a first clock cycle (see spreading code 1 during the first clock cycle in Fig.4); determining second intermediate correlation values (second two outputs of the elements 42) for the first plurality of sample sequences (from

DATA received) during a second clock cycle (See spreading code 2 during second clock cycle in Fig.4); determining correlation outputs (output of element 43 in Fig.8) for the first plurality of sample sequences (for the DATA received) from the first and second intermediate correlation values (inputs to element 43 is based on the elements 42). And although Imaizumi teaches the correlator performing the steps above, does not explicitly further teach determining a synchronization point that identifies an amount of delay incurred from transmission of the sample sequences from the correlation outputs.

Okubo also teaches, in the same field of endeavor, a correlating step (see Fig.1) further coupled to a code synchronization point detector (element 132) of determining a synchronization point (output of element 132) that identifies an amount of delay incurred from transmission of the sample sequences from the correlation outputs (see Fig.7 of notation and explanation of ** ). Okubo further suggests that element 132 provides proper peak pulse even during presence of thermal noise or the like in the transmission path environment (note c.9, l.20-22). Synchronizing a received signal through a correlator is well-known in the art and as also taught by Okubo. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to synchronize the received signal of Imaizumi by providing the correlation outputs to the synchronization point determiner (132) for the purpose of providing proper peak pulse even during presence of thermal noise or the like in the transmission path environment (note c.9, l.20-22), thus provide a proper symbol clock (output of element 133).

Regarding claim 2, Imaizumi further teaches wherein determining the first intermediate correlation values (first two outputs of the elements 42) comprises processing coefficients in a first code sequence group (first two Spreading code in element 47) in parallel with corresponding sample values in corresponding sample sequence groups from the first plurality of sample sequences (first four of elements 41 each performed in parallel, see Fig.8).

Regarding claim 3, Imaizumi further teaches wherein determining the second intermediate correlation values (second two outputs of the elements 42) comprises processing coefficients in a second code sequence group (second two Spreading code in element 47) in parallel with corresponding sample values in corresponding sample sequence groups from the first plurality of sample sequences (first four of elements 41 each performed in parallel, see Fig.8).

Regarding claim 4, Imaizumi further teaches wherein determining correlation outputs for the first plurality of sample sequences comprises taking a sum of the first and second intermediate correlation values for each of the first plurality of sample sequences (element 43 in Fig.8 receiving all the outputs of elements 42).

Regarding claim 5, Imaizumi further teaches determining first intermediate correlation values for a second plurality of sample values during a third clock; determining second intermediate correlation values for the second plurality of sample values during a fourth clock; and determining correlation output values for the second plurality of sample value from the first and second intermediate correlation values (wherein the DATA being continuously received, after the processing of first plurality of sample values are processed, a second plurality of sample values are processed next as in the same steps as explained in claim 1).

Regarding claim 6, Imaizumi in view of Okubo teaches all subject matter claimed, as applied to claim 1. Imaizumi further teaches processing code sequences into the registers previously used for the first group of coefficients during a second clock cycle (see element 48 in Fig.8 wherein the spreading code is shifted by and provided to element 47).

Regarding claim 7, Imaizumi further teaches wherein the code sequence comprises L coefficients and the first and second group of coefficients in the code sequence each comprises n coefficients, where L and n may be any value (see groups in element 47 divided into any number of groups interpretable by breaking the spreading code in the Register, and the spreading code received by 48 having any number of coefficients).

Regarding claim 8, Imaizumi further teaches wherein the first and second group of sample values in tile received sample each comprises n sample values (n sample values stored in each of the element 41 in Fig.8).

Regarding claim 9, Imaizumi further teaches wherein the first and second group of coefficients in the code sequence are contiguous (see the spreading code divided into groups in element 47 is from contiguous spreading code in element 48).

Regarding claim 11, the claim is rejected as applied to claim 4 with similar scope.

Regarding claim 12, the claim is rejected as applied to claim 4 with similar scope, wherein the further limitation of the second group of sample values are explained in claim 10.

Regarding claim 13, the claim is rejected as applied to claim 4 with similar scope.

Regarding claim 14, the claim is rejected as applied to claim 1. Imaizumi further teaches wherein the code sequence having L/n groups (n=1 and L is the number of Spreading code in element 47 in Fig.8).

Regarding claim 15, the claim is rejected as applied to claim 12 with similar scope.

Regarding claim 17, Okubo further teaches determining correlation with highest numerical value (513 in Fig.2).

Regarding claim 18, Imaizumi further teaches wherein the DATA received is a continuously received data, as previously explained.

Regarding claim 19, the claim is rejected as applied to claim 4 with similar scope.

Regarding claim 20, Imaizumi further teaches wherein the code sequence comprises a plurality of L contiguous values (L spreading codes in element 47, each having its respective values).

Regarding claim 21, Imaizumi further teaches wherein the code sequence is organized into a plurality of n code sequence groups (each spreading code in elements 47 being a group).

Regarding claim 22, Imaizumi further teaches wherein a number, d, sample sequences are selected to process in parallel where each of the sample

sequences has L contiguous sample values from the sample (d and L being a number of the elements 41 in Fig.8).

Regarding claim 23, Imaizumi further teaches wherein the first set of sample sequences is organized into a plurality of contiguous sample sequence groups having n values each (each of element 41 being a group of its own).

Regarding claim 25, Imaizumi further teaches wherein processing coefficients comprises processing coefficients for L/n clocks (n=1 and L is the number of Spreading code in element 47 in Fig.8, hence processes for L/n clocks).

Regarding claim 26, the claim is rejected as applied to claim 25 with similar scope.

Regarding claim 27, the claim is rejected as applied to claim 15 with similar scope.

Regarding claim 29, the claim is rejected as applied to claim 17 with similar scope.

Regarding claim 30, Imaizumi further teaches wherein the code sequence is organized into L/n groups (n=1 and L being the number of spreading code elements in 47 of Fig.8).

Regarding claim 31, Imaizumi further teaches correlating sample sequence groups in elements 41 with code sequence groups of having L or d elements in element 47.

Regarding claim 32, the claim is rejected as applied to claim 25 with similar scope.

Regarding claim 33, the claim is rejected as applied to claim 26. Imaizumi further teaches an accumulation unit (element 43 in Fig.8) that generates a correlation output for each of the sample sequences (output of element 43).

Regarding claim 35, Imaizumi further teaches first and second sample sequences (first half of elements 41 and second half of elements 41 in Fig.8) each performed in parallel (in elements 42) during a different clock cycle (see Fig.4).

Regarding claim 38, the claim is rejected as applied to claim 31 with similar scope.

Regarding claim 39, the claim is rejected as applied to claim 33. Imaizumi further teaches plurality of n+d-1 sample registers (number of S/H elements 41 in Fig.8, wherein n=1, hence n+d-1 = d, which is interpreted herein as the number of elements 41).

Regarding claim 41, the claim is rejected as applied to claims 35 and 39 with similar scope.

Regarding claim 44, the claim is rejected as applied to claim 38 with similar scope.

Regarding claim 45, the claim is rejected as applied to claim 32 with similar scope.

Regarding claim 46, the claim is rejected as applied to claim 33 with similar scope.

Regarding claim 47, the claim is rejected as applied to claim 37 with similar scope.

Regarding claim 48, Imaizumi further teaches wherein the first sample values are loaded during first clock cycle, and after outputting at element 43 in Fig.8, loading second sample values to elements 41 at second clock cycle.

Regarding claim 49, the claim is rejected as applied to claim 37 with similar scope.

Regarding claim 50, Imaizumi further teaches wherein each of the code sequence groups are loaded into the same set of code sequence registers (the spreading code loaded by shifting the spreading code to the same registersin elements 47).

3. Claims 34,37,40,42 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imaizumi et al. US 6,707,844 (Imaizumi) in view of Okubo et al. US 6,212,222 (Okubo) and Motegi et al. US 6,490,316 B1 (Motegi).

Regarding claim 34, Imaizumi in view of Okubo teaches all subject matter claimed, as applied to claim 33. And although Imaizumi teaches the accumulation unit (element 43 in Fig.8) that generates a correlation output for each of the sample sequences (output of element 43), Imaizumi does not explicitly further teach a plurality of accumulation sub-units generating a correlation value for a designated sample sequence after each of the code sequence groups are processed.

Motegi teaches an accumulation unit (see Fig.3 receiving an output of correlators 111-114) and further teach a plurality of accumulation sub-units (115,116,117) generating a correlation value (output of 117) for a designated sample sequence (from element 100) after each of code sequence groups are processed (code

group 107-110). Motegi further teaches that this allows the system to properly provide correlation value (note c.1, l.48-54). And thus, although Imaizumi only shows an accumulation unit, it would have been obvious to one skilled in the art at the time the invention was made to recognize that the accumulation unit of Imaizumi may as well incorporate plurality of sub-units, as taught by Motegi, for the purpose of properly providing correlation value (note c.1, l.48-54).

Regarding claim 37, the claim is rejected as applied to claim 17 with similar scope.

Regarding claim 40, the claim is rejected as applied to claim 34, wherein Imaizumi further teaches d sample sequences from elements 41 in Fig.8 are processed and accumulated in element 43.

Regarding claim 42, the claim is rejected as applied to claim 39 with similar scope.

Regarding claim 43, the claim is rejected as applied to claim 37 with similar scope.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Ahn whose telephone number is (571) 272-3044. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sam K. Ahn
Patent Examiner

7/31/07